



Regulatory Advisory

November 2005



AIRBORNE TOXIC CONTROL MEASURE FOR IN-USE DIESEL-FUELED TRANSPORT REFRIGERATION UNITS (TRU) AND TRU GENERATOR SETS, AND FACILITIES WHERE TRUs OPERATE

What is the purpose of this regulation?

At its February 2004 public hearing, the California Air Resources Board (ARB) approved the *Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets, and Facilities Where TRUs Operate* (TRU ATCM). The TRU ATCM is designed to use a phased approach over about 15 years to reduce the diesel particulate matter (PM) emissions from in-use TRU and TRU generator set engines that operate in California.

Why is diesel PM of concern?

In 1998, the Board identified diesel PM as a toxic air contaminant (TAC). Diesel exhaust is a complex mixture of thousands of gases and fine particles that contains more than 40 identified TACs. These include many known or suspected cancer-causing substances, such as benzene, arsenic and formaldehyde. Because of the amount of emissions to California's air and its potency, diesel PM is the number one contributor to the adverse health impacts of TACs known today. Numerous studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks and premature deaths among those suffering from respiratory problems.

Who is affected by the TRU ATCM?

Once the TRU ATCM becomes effective, it will apply to owners and operators of in-use diesel-fueled TRUs and TRU generator sets that operate in California, irrespective of whether they are registered in or outside the State. This includes all carriers that transport perishable goods using diesel-powered refrigeration systems on trucks, trailers, shipping containers, and railcars that operate in California. Facilities with 20 or more loading dock doors serving refrigerated areas where perishable goods are loaded or unloaded for distribution on trucks, trailers, shipping containers, or railcars that are under facility control will also be affected.

What are the basic requirements of the TRU ATCM?

Applicable facilities will be required to submit a one-time report to ARB that provides information about the size and type of facility, and the TRU activity that occurs at the facility. This information is needed to evaluate the overall effectiveness of the regulation in reducing diesel PM concentrations near facilities where numerous TRUs operate.

The TRU ATCM will require in-use TRU and TRU generator set engines that operate in California, to meet in-use performance standards that vary by horsepower range. These standards can be met by:

- ☐ Using an engine that meets the required engine certification value, or
- ☐ Equipping the engine with the required level of verified diesel emission control strategy, or
- ☐ Using an alternative technology.

The In-Use Performance Standards have two levels of stringency (see Tables 1 & 2) that will be phased-in over time (see Table 3). The Low-Emission TRU In-Use Performance Standards shown in Table 1 are phased in first and apply to the older TRUs. The more stringent Ultra-Low-Emission TRU In-Use Performance Standards shown in Table 2 must be met in future years.

Table 1
Low-Emission In-Use Performance Standards

Horsepower	Engine Certification	Verified Diesel Emission Control Strategy
Less than 25	0.30 gram per hp-hr	Level 2 or better (at least 50% PM reduction)
25 or Greater	0.22 gram per hp-hr	Level 2 or better (at least 50% PM reduction)

Table 2
Ultra-Low Emission In-Use Performance Standards

Horsepower	Engine Certification	Verified Diesel Emission Control Strategy
Less than 25	N/A	Level 3 (at least 85% PM reduction)
25 or Greater	0.02 gram per hp-hr	Level 3 (at least 85% PM reduction)

Alternative technologies can be used to meet the in-use performance standards if diesel PM emissions are eliminated while at a facility, with limited exceptions (e.g. during an emergency or normal yard maneuvering).

They include use of:

- ✓ Electric standby,
- ✓ Cryogenic temperature control systems or hybrid cryogenic temperature control systems,
- ✓ Alternative fueled engines,
- ✓ Alternative diesel-fueled engines,
- ✓ Fuel cell-powered temperature control systems, and
- ✓ Other systems approved by ARB to not emit diesel PM or increase public health risk near a facility.

Owners of TRUs based in California will be required to apply for an ARB identification number and submit an initial operator report to ARB that provides information about the TRUs they operate in California. Update reports will need to be provided as TRUs are leased, purchased, or sold. The information is needed to assist in the implementation of the ATCM. Owner/operators of non-California-based TRUs and TRU generator sets may choose to voluntarily apply for an ARB identification number. The coded identification numbers include information that will reduce roadside inspection time.

When does this regulation go into effect?

The facility reports are due January 31, 2006.

Applications for an ARB identification number for all California-based TRUs and TRU generator sets and the initial operator reports are due on or before January 31, 2009, which follows the first compliance date.

TRUs and TRU generator sets that operate in California will be required to meet the in-use performance standards on a phased compliance schedule based on the engine model year. Older TRU engines, for example 2001 and older and 2002 engines, will be required to come into compliance first with the low-emission TRU in-use performance standard in 2008 and 2009, respectively, and will then be subject to the more stringent ultra-low-emission TRU in-use performance standard seven years later, in 2015 and 2016, respectively. Newer TRU engines, for example 2003 and subsequent engines, bypass the low-emission TRU in-use performance standard, but will be required to meet the ultra-low emission in-use performance standard seven years after the model year. Table 3 shows the in-use TRU and TRU generator set compliance schedule.

Table 3
In-Use TRU and TRU Generator Set Compliance Schedule

Engine Model Year	Compliance Date for Low Emission Std	Compliance Date for Ultra-Low Emission Std
2001 or older	December 31, 2008	December 31, 2015*
2002	December 31, 2009	December 31, 2016*
2003	N/A	December 31, 2010
Future years	N/A	December 31st of the model year + 7 years

* Early compliance (in 2005 to 2007) with the low emission in-use standard for model year 2002 or older may extend compliance date for ultra-low emission standard by up to three years.

For more information

To obtain a copy of the regulation, ARB staff report, and other related documents, visit our web site at <http://www.arb.ca.gov/regact/trude03/trude03.htm>. Frequently asked questions and guidelines are also available at <http://www.arb.ca.gov/diesel/tru.htm>.

If you have a disability-related accommodation need, please go to <http://www.arb.ca.gov/html/ada/ada.htm> for assistance or contact the ADA Coordinator at (916) 323-4916. If you are a person who needs assistance in a language other than English, please contact the Bilingual Coordinator at (916) 324-5049.

Additional questions may be addressed to Mr. Rod Hill of the Stationary Source Division at (916) 327-5636.